Yu Qing (Perrie) **Quek**

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Education

University of Pennsylvania, School of Engineering and Applied Science — *Philadelphia, PA*

Master of Computer and Information Technology in Computer Science — *Aug 2023 – Present*

- **GPA**: 4.0/4.0
- **Relevant coursework:** Distributed Systems, Interactive Computer Graphics, Computer Systems Programming, Database and Information systems, Big Data Analytics, Data Structures and Algorithms, Software Development, Discrete Mathematics

Nanyang Technological University, School of Art, Design and Media — *Singapore*

Bachelor of Fine Arts in Media Art, Honours (Highest Distinction) — *Aug 2017 – Jun 2021*

- **Winner of the Lee Kuan Yew Gold Medal, 2020/2021**: Graduated top of class in a cohort of 160 students
- **GPA**: 4.79/5.00
- **Dean's list:** Awarded in academic Years 2017/2018, 2018/2019, 2020/2021
- **Scholarship:** Recipient of the NTU-University Scholars Programme Scholarship

Skills

Languages & Frameworks C++, Java, OpenGL, C, Python, C#, PostgreSQL, SQL, HTML/CSS, JavaScript, React.js, Node.js, Express, Vite

Software / Tools Docker, Git, Pandas, Adobe Creative Suite, QT Creator, Autodesk Maya, Dragonframe

Work Experience

Teaching Assistant — *Philadelphia, PA*

University of Pennsylvania — *Aug 2024 – Present*

- Teaching Assistant for CIT 5950 Computer Systems Programming and CIS 2400 Introduction to Computer Systems
- Provided code reviews, hosted weekly office hours, and supported students in C and C++
- Developed tests for homework autograder and maintained assignment infrastructure

Graduate Research Assistant — *Philadelphia, PA*

Autonomous Manufacturing Lab @ UPenn — *Jun 2024 – Aug 2024*

- Converted a Java-based codebase to C to integrate with Rhino3D (3D modeling software), optimizing workflow for architectural simulations
- Developed custom scripting components, enabling seamless interaction between simulation software and architectural models
- Improved performance by identifying redundancies and optimizing data structures

Selected Projects

Multithreaded SMTP & POP3 Email Server (C++) — *Feb 2025*

- Designed and implemented a multithreaded SMTP/POP3 email server from scratch, adhering to RFC standards, with persistent storage and fault tolerance for reliable email handling
- Supported concurrent client connections with synchronization mechanisms for local and remote clients through Thunderbird

Mini Minecraft [link] — *Nov 2024 - Dec 2024*

- Developed a mini version of Minecraft using C++ and OpenGL in a team of 3
- Implemented procedural terrain generation, day/night cycles, texturing, procedural assets, post-process shaders and more

Chartify | Music Trend Analytics Tool [link] — *Sep 2024 - Dec 2024*

- Built a full-stack web application delivering music trend analytics through interactive data visualizations
- Designed and implemented a PostgreSQL database, integrating datasets from Spotify, Kaggle, and lyrics retrieved via LRCLIB API
- Developed and optimized SQL queries for efficient data retrieval

'Study With Me' Web Application [link] — *Jan 2024*

- **Awarded:** first place winner at the MCIT 2024 Hackathon
- Led a team of four to build a React and Node.js web app, aimed at enhancing study sessions' productivity
- Designed customizable avatars, interactive UI, and adjustable study session timers for a user-friendly experience